ZyXEL

Key Features

- 1.6/3.6/8.8 Gbps Non-blocking Switch Fabric
- 802.1x for Access Authentication
- 4 IEEE 802.1p Hardware Priority Queues
- SPQ and WRR
- Intrusion Lock, MAC Freeze, MAC Filtering & Static MAC Forwarding
- IGMP Snooping v1, v2, v3
- ZyXEL iStacking™ Technology, One IP Management for 24 Devices
- IEEE 802.3af Power over Ethernet (ES-2108PWR/ES-2024PWR)
- Easy Web GUI for Intelligent PoE Power Management (ES-2108PWR/ES-2024PWR)

Enterprise LAN Switches

Switch 2000 Series

ZyXEL Switch 2000 Series is the managed Layer-2 Switch specially designed for SME, campus or small workgroup environments. It's fully featured to empower high multi-task performance in today's dynamic networks requiring security, QoS and management capabilities. The complete product portfolio with optimized port configuration and Power over Ethernet (PoE) functionality brings easy solutions to any network in need.

The ZyXEL 2000 Series come in two groups: ES-2000 and ES-2100:

The ES-2000 group comes in two models: ES-2024A and ES-2024PWR; this group delivers 24 port 10/100Base-TX, 10/100 PoE Base-TX and 2 GbE dual-personalities.

The ES-2100 group comes in three models: ES-2108, ES-2108-G and ES-2108PWR. The ES-2100 group delivers 8 port 10/100Base-TX, 10/100 PoE Base-TX and one GbE dual-personality on ES-2108-G and ES-2108PWR.

Key Benefits

Intelligent Traffic Prioritization for Multiple Services

Multiple priority queues and scheduling mechanism make the ZyXEL 2000 Series easy to perform traffic prioritizing for delay-service applications, and you can also customize DSCP settings to provide an end-to-end QoS environment. The MVR ensures efficient transmission of multicasting stream on the network-wide multicast VLAN. For bandwidth management, the 2000 Series supports bandwidth increments to give different bandwidth allocations. With broadcast storm control, the network keeps the broadcast packets below the pre-defined threshold to prevent network outrages.

High-Security Network Edge

The ZyXEL 2000 Series features wide-range security functions to prevent unauthorized data access. The 256 Static VLAN entry enables complicated VLANs portfolio for policy management, and the full-range 4K VLAN (4K PVID) is equipped as well. In addition to 802.1x central access authentication, it further assigns VLAN and bandwidth per pre-defined attribution for valid users to add flexibility to network management. In addition, extra support of MAC filtering, MAC freezing and Specific MAC forwarding allow network administrators to set security policies toward the device MAC addresses. The 2000 Series has been designed to offer comprehensive security features for enforcing security policies to the edge.

Excellent Network Management Capability

The ZyXEL 2000 Series comes with rich management tools to streamline your management effort. With ZyXEL's exclusive iStacking™ technology, you can manage up to 24 ZyXEL switches through one IP address. In addition, through Web-GUI, CLI (Command Line Interface) and text-based configuration, network managers can select the one management interface they are most comfortable with to get the job done efficiently. Moreover, you can protect your management session with SSHv1/v2 authentication and SSL encryption features. With the comprehensive features, ZyXEL's 2000 Series is your first choice for cost-effective networking.

Enterprise LAN Switches

Switch 2000 Series

Intelligent PoE for Cost Savings (only for ES-2024PWR)

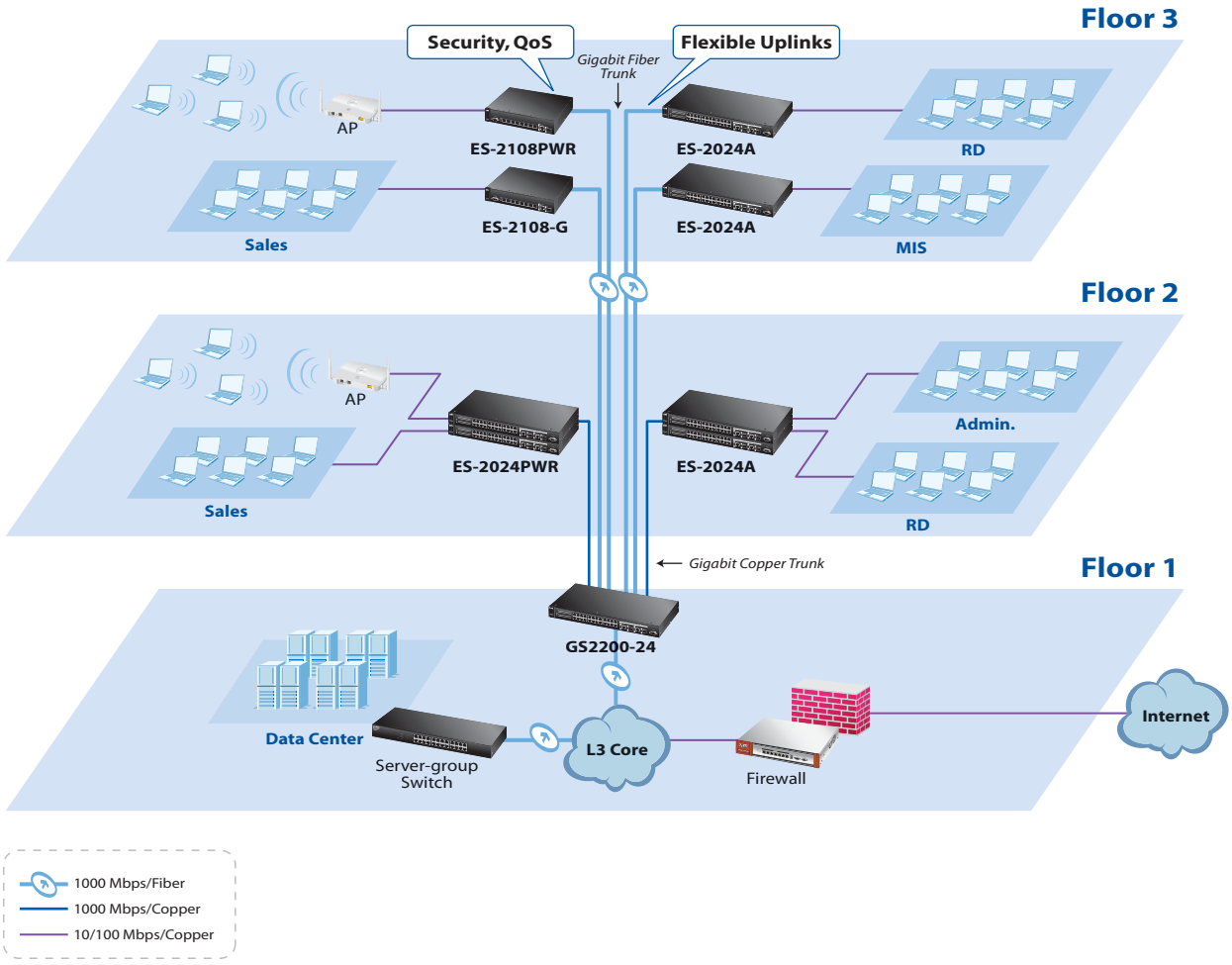
ZyXEL's Intelligent PoE feature provides two power supply modes:

• Classification Mode—the switch reserves the maximum power (mW) to each powered device (PD) according to the priority levels.

• Consumption Mode—the switch manages the total power supply, so each connected PD gets the actual power it needs.

In the Consumption Mode, ZyXEL's Intelligent PoE provides actual amount of power PDs need. When power consumption of an attached device is detected, ZyXEL's Intelligent PoE will reserve the required power automatically. In addition, you can set power feeding priorities on different ports to get the best use of power resource. This capability can increase the number of devices connected and deliver a better ROI for the business.

Key Applications



The ZyXEL 2000 Series

ES-2000

ES-2024A

- 24 10/100Base-TX ports
- 2 GbE dual-personalities
- Switching capacity: 8.8 Gbps
- Forwarding rate: 6.6 Mpps

ES-2024PWR

- 24 10/100Base-TX PoE ports
- 2 GbE dual-personalities
- Switching capacity: 8.8 Gbps
- Forwarding rate: 6.6 Mpps

ES-2100

ES-2108

- 8 10/100Base-TX ports
- Switching capacity: 1.6 Gbps
- Forwarding rate: 1.2 Mpps

ES-2108-G

- 8 10/100Base-TX ports
- 1 GbE dual-personalities
- Switching capacity: 3.6 Gbps
- Forwarding rate: 2.7 Mpps

ES-2108PWR

- 8 10/100Base-TX PoE ports
- 1 GbE dual-personalities
- Switching capacity: 3.6 Gbps
- Forwarding rate: 2.7 Mpps

Specifications

Feature/Model	ES-2024A	ES-2024PWR	ES-2108	ES-2108-G	ES-2108PWR
Port Density					
10/100Base-TX	24	-	8	8	-
10/100Base-TX PoE	-	24	-	-	8
10/100/1000Base-T	-	-	-	-	-
Open SFP Slot (GbE)	-	-	-	-	-
Dual Personality GbE Ports	2	2	-	1	1
Performance					
Switching Capacity, Gbps	8.8	8.8	1.6	3.6	3.6
Switching Forwarding Rate, Mpps	6.6	6.6	1.2	2.7	2.7
Packet Buffer, Bytes	256K	256K	256K	256K	256K
MAC Address	8K	8K	8K	8K	8K
Power Requirement					
Input Voltage of AC	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz
Maximum Power Consumption, Watt	14.1	171.9	7.8	7.8	132.1
Environmental Specification					
Operating Temperature	0°C ~ 45°C	0°C ~ 45°C	0°C ~ 45°C	0°C ~ 45°C	0°C ~ 45°C
Storage Temperature	-25°C ~ 70°C				
Operating Humidity	10% ~ 90%, (non-condensing)				
Physical Feature					
Dimensions, (W) x (D) x (H) mm	438 x 173 x 44.45	438 x 270 x 44.45	250 x 133 x 37	250 x 133 x 37	250 x 235 x 44.45
Weight, kg	2.1	4.0	1.2	1.2	2.4

Enterprise LAN Switches

Switch 2000 Series

Features

Standard Compliance

- IEEE 802.3 10Base-T Ethernet
- IEEE 802.3u 100 Base-Tx Ethernet
- IEEE 802.ab 1000 Base-T Ethernet
- IEEE 802.3z
- IEEE 802.3x flow control
- IEEE 802.1D spanning tree protocol
- IEEE 802.1w rapid spanning tree protocol
- IEEE 802.1s multiple spanning tree protocol
- IEEE 802.1p class of service, priority protocols
- IEEE 802.1Q VLAN tagging
- IEEE 802.1x port authentication
- IEEE 802.3ad LACP aggregation

Traffic Management and QoS

- Rate limiting: policy-based/port-based bandwidth control, 64 kbps granularity
- Port-based egress traffic shaping
- Broadcast storm control
- IEEE 802.1p with 4 hardware priority queues per port for different types of traffic
- WRR (Weighted Round Robin)/SPQ scheduling algorithm
- Supports DSCP
- Supports DSCP to 802.1p priority mapping
- IGMP snooping v1, v2, v3
- Congestion control on all ports
- MVR (Multicast VLAN Registration)
- Bandwidth control (ingress/egress) in 64 Kbps steps

Link Aggregation

- IEEE 802.3ad LACP link aggregation compliant
  - ES-2000: 3 aggregation groups, 4 ports/per group randomly selected
  - ES-2100: 2 aggregation groups, 4 ports/per group randomly selected
- Support static manually port trunking

Resilient Network

- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)

User Security and Authentication

- MAC filtering per port secures access to each port
- IEEE 802.1Q tag-based and port-based VLAN
- Support GVRP, automatic VLAN member registration
- 256 static VLAN, up to 4K dynamic VLAN
- Full range 4K PVID support
- Port-base VLAN
- Port security, port isolation, port mirroring, intrusion lock
- MAC freeze
- MAC filtering per port secures access to each port
- Static MAC forwarding per port: only specified MAC addresses can access the network (port security)
- Limited MAC number per port
- IP source guard (static IP/MAC binding, ARP inspection)
- Loop guard prevents a switch from being affected by another switch which is already in a looping status
- RADIUS MAC login
- 802.1x port-based authentication, compensated assignment over VLAN and bandwidth for valid access
- Clone feature copies port settings from one port to other port(s) in one step

Network Administration Security

- User name/password required for web/telnet/local console administrators
- Multiple login session
- Multiple access permission management
- SSH v1/v2
- SSL
- RADIUS accounting
- TACACS+ authentication, accounting
- NTP, daylight saving

Network Management

- Supports ZyXEL iStacking™, up to 24 switches can be managed by one IP address
- Intuitive web-based management with all features configurable
- Telnet CLI
- SNMP v1, v2c, v3
- RS-232c local console
- DHCP relay, DHCP relay per VLAN, DHCP relay option 82, DHCP client
- RMON four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
- Supports source/destination/both port mirroring

MIB Information

- RFC1213 MIB II
- RFC1493 Bridge MIB
- RFC1643 Ethernet MIB
- RFC1757 RMON Group 1, 2, 3, 9
- RFC2011 IP MIB
- RFC2012 TCP MIB
- RFC2013 UDP MIB
- RFC2233 ifVHC Packet Group
- RFC2674 VLAN MIB
- RFC2925 PING-MIB and TRACEROUTE-MIB
- ZyXEL Private MIB

Safety Agency Certification

- UL 60950-1
- CSA 60950-1
- EN 60950-1
- IEC 60950-1

SFP Transceivers

Optional Gigabit SFP Transceivers

Speed	Model	Type	Description
Gigabit	SFP-1000T	RJ-45 connector	Up to 100 m using standard Ethernet cable
	SFP-SX-D	LC connector	SFP SX 550 m commercial type transceiver, DDMI version*
	SFP-LX-10-D	LC connector	SFP LX 10 km commercial type transceiver, DDMI version*
	SFP-BX1310-10-D	LC connector	Bidirectional singlemode, up to 10 km reach, DDMI version*
	SFP-BX1490-10-D	LC connector	Bidirectional singlemode, up to 10 km reach, DDMI version*
	SFP-LHX1310-40-D	LC connector	SFP LHX 1310 wavelength 40 km commercial type transceiver, DDMI version*
	SFP-ZX-80-D	LC connector	SFP ZX 80 km commercial type transceiver, DDMI version*

**: Switch 2000 series don't support DDMI (Digital Diagnostics Monitoring Interface) feature.*
IMPORTANT: Bi-directional SFP must be used in pairs (Example: 1 x SFP-BX1310-10-D and 1 x SFP-BX1490-10-D connected together is a solution)

For more product information, visit us on the web at www.ZyXEL.com

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